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09/966,718	09/27/2001	Shunji Watanabe	S004-4404	6393

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ADAMS & WILKS
31st Floor
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New York, NY 10004

EXAMINER

TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/966,718

Applicant(s)

WATANABE ET AL

Examiner

Susy N Tsang-Foster

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 12-24, 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 25-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-11 and 25-30 in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 12-24, 31, and 32 are withdrawn from further consideration pursuant to 37 CFR 01.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 5.

Priority

3. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in Japan on 9/28/2000, 4/16/2001, 7/13/2001, and 9/25/2001. It is noted, however, that applicant has not filed a certified copy of the foreign priority applications as required by 35 U.S.C. 119(b).

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Page 25 of the specification mentions electrode collector 2 which is not in the drawings. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: Figure 1 shows reference label 110 which is not described in the specification. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the gasket contacting a surface of the negative electrode as recited in claim 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

7. The disclosure is objected to because of the following informalities: On page 25 of the specification, it is unclear what PPS stands for and has not been defined.

Appropriate correction is required.

8. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: In claim 25, the limitation “a surface of a gasket contact with a surface of negative electrode” is not in the specification or drawings.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-11 and 25-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the limitation “step of heating” is indefinite because it is unclear what is being heated.

In claim 4, the limitation “step of heating” is indefinite because it is unclear what is being heated.

In claim 25, the limitation “ step of heating” is indefinite because it is unclear what is being heated.

In claim 6, the limitation “the difference between the temperature time profile during the heating step and that during the reflow soldering step is within $\pm 50\%$ in a heating region of 0 to 150 °C” is indefinite because it is unclear what the percentage difference is based on. Furthermore, it is unclear how the temperature profile of the heating step and that of the reflow soldering step can be compared if the total time period of heating or reflow soldering is different. It would appear that the temperature time profile during the heating step and that during the reflow soldering step must expand the same time interval in order for a comparison to be possible.

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In claim 7, the limitation “wherein the difference between heating step time and reflow soldering step time is within $\pm 50\%$ in a heating region of 0 to 150 °C” is indefinite because it is unclear at what temperature or temperatures the difference is being measured. It is also unclear how the difference can be measured if the heating step is carried out over a variable temperature profile and the reflow soldering step is carried out over a variable temperature profile.

In claim 8, the limitation “wherein the difference between the temperature time profile during the heating step and that during the reflow soldering step is within $\pm 20\%$ in a heating region of 150 to 180 °C” is indefinite because it is unclear what the percentage difference is based on. Furthermore, it is unclear how the temperature profile of the heating step and that of the reflow soldering step can be compared if the total time period of heating or reflow soldering is different. It would appear that the temperature time profile during the heating step and that during the reflow soldering step must expand the same time interval in order for a comparison to be possible.

In claim 9, the limitation “wherein the difference between heating step time and reflow soldering step time is within $\pm 20\%$ in a heating region of 150 to 180 °C” is indefinite because it is unclear at what temperature or temperatures the difference is being measured. It is also unclear how the difference can be measured if the heating step is carried out over a variable temperature profile and the reflow soldering step is carried out over a variable temperature profile.

In claim 10, the limitation “wherein the difference between the temperature-time profile during the heating step and that during the reflow soldering step is within $\pm 10\%$ in a heating region of 180 to 300 °C” is indefinite because it is unclear what the percentage difference is based on. Furthermore, it is unclear how the temperature profile of the heating step and that of the reflow soldering step can be compared if the total time period of heating or reflow soldering is different. It would appear that the temperature time profile during the heating step and that during the reflow soldering step must expand the same time interval in order for a comparison to be possible.

In claim 11, the limitation “wherein the difference between heating step time and reflow soldering step time is within $\pm 10\%$ in a heating region of 180 to 300 °C” is indefinite because it is unclear at what temperature or temperatures the difference is being measured. It is also unclear how the difference can be measured if the heating step is carried out over a variable temperature profile and the reflow soldering step is carried out over a variable temperature profile.

In claim 27, the limitation “wherein said solution is dried at range from 80 °C to lower than melting point of the gasket” is indefinite because it is unclear what the endpoint of the range is.

In claim 29, the limitation “wherein said solution is dried at range from 100 °C to lower than melting point of the gasket” is indefinite because it is unclear what the endpoint of the range is.

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Claims depending from claims rejected under 35 USC 112, second paragraph are also rejected for the same.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. As best understood, claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Mori et al. (US 6,274,277 B1).

Mori et al. disclose manufacturing a nonaqueous electrolyte secondary battery comprising assembling and sealing the positive electrode, negative electrode, nonaqueous solvent, electrolytic solution, separator and gasket and applying a pitch adhesive sealant to the surface of the gasket (col. 10, lines 30-65). The positive electrode active material was dried at 250 °C for 12 hours which is a also heating step (col. 10, lines 45-46). The battery manufactured is evaluated by performing a reflow furnace passage resistance test (col. 12, lines 14-16). The temperature profile of the reflow furnace test comprised a heating process of 180 °C for 2 minutes, a heating process of 180 °C for 30 seconds, 245 °C for 30 seconds and 180 °C for 30 seconds and a natural cooling process to cool to room temperature and the batteries were caused to pass the furnace three times altogether while being subjected to visual inspection and voltage examination (col. 12, lines 16-29).

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The battery manufactured is mounted onto a circuit substrate by automatic soldering according to the reflow method which has the same temperature profile stated above (col. 1, lines 1-11).

13. As best understood, claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al. (US 6,489,062 B1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Watanabe et al. disclose a method of mounting a nonaqueous electrolyte secondary battery by soldering the battery to a printed substrate after terminals are welded to the battery (col. 1, lines 40-53). The soldering step is automated by using a method called reflow soldering (col. 1, lines 54-55). The battery is manufactured by assembling and sealing the positive electrode, the negative electrode, nonaqueous solvent, electrolytic solution, separator and gasket and applying adhesive sealant comprising a mixture of asphalt and butyl rubber to the surface of the gasket (col. 8, lines 53-64 and col. 9, line 15 to col. 10, line 25). Furthermore, prior to assembling the battery, the positive electrode is heat treated at 250 °C for 8 hours and the negative electrode is heat treated at 250 °C for 8 hours (col. 9, lines 30-39 and col. 10, lines 3-

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10). The gasket was made of polyphenylene sulfide which has a deformation temperature of 230 °C or above (col. 7, lines 1-9 and col. 10, lines 22-23). Batteries produced are examined by conducting a heating test at 180 °C for 10 minutes and heating at 240 °C for one minute which are reflow temperature conditions (col. 10, lines 27-46). Batteries which have excellent characteristics after the heating test can be practically used (col. 10, lines 39-45).

14. As best understood, claims 1-11 are rejected under 35 U.S.C. 102(e) as being anticipated by clearly anticipated by Watanabe et al. (US 2002/0068221 A1).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

See paragraphs 7, 8, 26, 34, 48, 57, 61, and 63 of the reference.

15. As best understood, claims 25, 26, and 28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tanaka (US 5,360,685).

See Figure 2; col. 2, lines 43-47; col. 5, line 67 to col. 6, line 68; col. 7, lines 1-19 and lines 59-68; col. 10, lines 33-48; col. 12, lines 10-45 of the reference.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 6,489,062 B1) in view of Tanaka (US 5,360,685).

Watanabe et al. disclose a method of mounting a nonaqueous electrolyte secondary battery by soldering the battery to a printed substrate after terminals are welded to the battery (col. 1, lines 40-53). The soldering step is automated by using a method called reflow soldering (col. 1, lines 54-55). The battery is manufactured by assembling and sealing the positive electrode, the negative electrode, nonaqueous solvent, electrolytic solution, separator and gasket and applying adhesive sealant comprising a mixture of asphalt and butyl rubber to the surface of the gasket (col. 8, lines 53-64 and col. 9, line 15 to col. 10, line 25). Furthermore, prior to assembling the battery, the positive electrode is heat treated at 250 °C for 8 hours and the negative electrode is heat treated at 250 °C for 8 hours (col. 9, lines 30-39 and col. 10, lines 3-10). The gasket was made of polyphenylene sulfide which has a deformation temperature of 230 °C or above (col. 7, lines 1-9 and col. 10, lines 22-23). Batteries produced are examined by conducting a heating test at 180 °C for 10 minutes and heating at 240 °C for one minute which are reflow temperature conditions (col. 10, lines 27-46). Batteries which have excellent characteristics after the heating test can be practically used (col. 10, lines 39-45).

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Watanabe et al. do not disclose that the asphalt in the sealant can be straight asphalt or blown asphalt.

Tanaka teaches that a sealant for a battery comprising rubber and a pitch and that the type of pitch preferred is petroleum asphalt such as straight asphalt and blown asphalt due to the controllability of physical properties, such as penetration, softening point and extensibility of the petroleum asphalts (col. 6, lines 35-68 and col. 7, lines 1-19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use straight asphalt or blown asphalt in the sealant of Watanabe et al. since Tanaka teaches that straight asphalt and blown asphalt have physical properties such as penetration, softening point and extensibility that can be controlled.

Conclusion


Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Friday from 9:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/ 

Susy Tsang-Foster
Primary Examiner
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